

REMARKS

The Examiner is thanked for the indication that claims 17, 19, 26, and 32 are allowable if rewritten in independent form.

Claims 1, 8-16, 18-31, and 35-44 are pending in the instant application. Claims 1-16, 18, 20-25, 27-31, and 33-38 presently stand rejected. Claims 1, 9, 14-16, 23, 28, and 35 are amended herein. Claims 2-7, 17, and 32-34 are hereby cancelled without prejudice. Claims 39 to 44 are newly presented. Entry of this amendment and reconsideration of the pending claims are respectfully requested.

Claim Rejections – 35 U.S.C. § 102

Claims 1-3, 9, 11, 14, 15, 20, 23, 27-30, 33, 35, and 38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kwa (US 5,255,111).

A claim is anticipated only if each and every element of the claim is found in a single reference. M.P.E.P. § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). “The identical invention must be shown in as complete detail as is contained in the claim.” M.P.E.P. § 2131 (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989)).

Independent Claims 1 and 23

Independent claim 1 now recites, in pertinent part, “wherein generating the optical transmit signal in response to the electrical transmit signal occurs **simultaneously** as generating the electrical receive signal in response to the received optical received signal.” Applicants respectfully submit that Kwa fails to disclose simultaneously sending and receiving optical signals to and from a waveguide.

To be sure, the following quotes are from pertinent portions of Kwa.

...the switch means 143 is an electronic switch which is **normally in the receive position Z**, as illustrated by the base line 46. **To transmit data, the switch means 143 is switched to the transmit position Y for short periods of time.** (*Kwa*, col. 5, lines 7-11)

In operation the reception of light pulses is not possible during the transmit window 44, and conventional wisdom dictates half-duplex transmission. However, with the following discussion, it will be evident that the capability of full-duplex transmission exists. (*Kwa*, col. 5, lines 50-54)

Consequently, with the arrangement described above, it is possible that one receive data of a pulse pair at the EOT 16 may be partially cut by the transmit window 44, and depending on what is left over for the sampler means 147, may or may not be registered. (*Kwa*, col. 6, lines 41-45)

The first quote discloses that switch means 143 (illustrated in FIG. 2 of *Kwa*) is **either** in the receive position Z **or** the transmit position Y. Accordingly, the bi-directional electro-optic transceiver (BEOT) 14 is only capable of either receiving or transmitting an optical signal at any given time—not both simultaneously.

The second and third quotes clearly state that the reception of light pulses is not possible during a transmit window. Accordingly, *Kwa* clearly states that simultaneous optical send and receive is not possible using their apparatus. Although *Kwa* subsequently states that full-duplex transmission exists, this does not contradict the previous sentence, since *Kwa* discloses a technique that generates dual transmission pulses 42 (see FIG. 3b) for a single piece of data ‘C’. If one of the receive pulses 40 (see FIG. 3a) arrives during a transmission window 44 (see FIG. 3b) for transmitting a transmit pulse 42 (e.g., receive pulse 40 at time slot 2 coincides with the transmit window for sending transmit pulse 42 at time slot 2), then the other receive pulse 40 at time slot 7 can be received instead. Accordingly, *Kwa* discloses a full-duplex technique that does not simultaneously send and receive optical data.

Consequently, *Kwa* fails to disclose each and every element of claim 1, as required under M.P.E.P. § 2131. Independent claim 23 now includes similar novel elements as independent claim 1. Accordingly, Applicants request that the instant §102 rejections of claims 1 and 32 be withdrawn.

Independent Claims 14 and 35

Amended independent claim 14 now recites, in pertinent part, “wherein the OSD includes a diode disposed within a waveguide and one of a distributed feedback grating or distributed Bragg reflectors disposed within the waveguide on either side of the diode...”

Claim 14 has been amended to include subject matter of claim 17 (now cancelled) deemed allowable by the Examiner. *Office Action* mailed 10/04/06, page 8.

Independent claim 35 has been amended to include similar subject matter as well. Accordingly, Applicants request that the instant §102 rejections of claims 14 and 35 be withdrawn.

Independent Claim 28

Amended independent claim 28 now recites, in pertinent part, “wherein the first and second transceivers are configured to adjust a length of a transmit interval and to adjust a length of a receive interval to optimize data throughput across the communication link.”

Claim 28 has been amended to include subject matter of claim 32 (now cancelled) deemed allowable by the Examiner. *Office Action* mailed 10/04/06, page 8. Accordingly, Applicants request that the instant §102 rejection of claims 28 be withdrawn.

New Independent Claim 39

New claim 39 recites, in pertinent part, “adjusting a bit-rate of the electrical transmit signal and the optical transmit signal **in real-time during operation based on current conditions of the single communication link** to maintain a link integrity across the single communication link with a remote transceiver at a maximum bit-rate.”

With reference to claim 8, the Examiner acknowledges that Kwa fails to disclose adjusting a bit rate, but cites para. [0073] and [0074] of Akimoto et al (US 2003/0039010) as discloses this missing element. These paragraphs of Akimoto merely disclose that a bit rate may be converted between 125 Mbps or 1.25 Gbps. However, Akimoto fails to disclose adjusting a bit rate in real-time during operation **based on current conditions** of a communication link.

Claim Rejections – 35 U.S.C. § 103

Claims 4-7, 12, 16, 18, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwa in view of BuAbbud et al (US 6,535,308). Claims 8, 21, 22, and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwa in view of Akimoto et al (US 2003/0039010). Claim 13 stand rejected under 35 U.S.C. § 103(a) as

being unpatentable over Kwa in view of BuAbbud in further view of Bremner et al (US 2004/0264973).

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03.

The dependent claims are novel and nonobvious over the prior art of record for at least the same reasons as discussed above in connection with their respective independent claims, in addition to adding further limitations of their own. Accordingly, Applicants respectfully request that the instant § 103 and § 102 rejections of the dependent claims be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative at (206) 292-8600 if the Examiner believes that an interview might be useful for any reason.


CHARGE DEPOSIT ACCOUNT

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

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